

Associations of Blood Lead and Disciplinary Behavior among Male Adolescents in Selangor, Malaysia

Abstract

A cross sectional comparative study was conducted to determine the relationship between blood lead levels and disciplinary behaviour among adolescent males. This study involved 194 secondary school adolescents ranging from 14 to 16 years old in both Petaling and Hulu Langat district. Respondent sampling frame was obtained from the Ministry of Education. Finger-prick method was applied to obtain capillary blood specimen. Blood lead was determined using an atomic absorption spectrometer equipped with graphite furnace. Both background and environmental profile were obtained from self-administered questionnaires. Disciplinary behaviour of each respondent was then assessed by using Self-Reporting Disciplinary Behaviour (SRDB). This assessment comprise 86 items on disciplinary actions and divided into eight subscales of offences which include crime, obscenity, self-cleanliness, time management, disrespect, vandalism, dishonesty and absenteeism. Total score for each items assessed were then calculated for behaviour score. Results showed that the mean of blood lead concentration is 4.6134 $\mu\text{g/dL}$ (95% CI : 4.0146 - 5.2122 $\mu\text{g/dL}$). The mean of behavior scores calculated is 40.94. There is no significant difference found in the mean blood lead concentrations between adolescents with disciplinary actions and adolescents with no disciplinary actions ($t = 0.708$; $p = 0.480$). Findings showed that blood lead has no significant correlation between blood lead and behavior score ($r = 0.74$, $p > 0.05$). There are significant correlation between PbB concentrations and both eating ($r = 0.166^*$, $p < 0.05$) and damaging canteen property ($r = 0.163^*$, $p < 0.05$) respectively. In conclusion, this study revealed that the PbB concentration has no significant statistical correlation with disciplinary behavior among respondents.